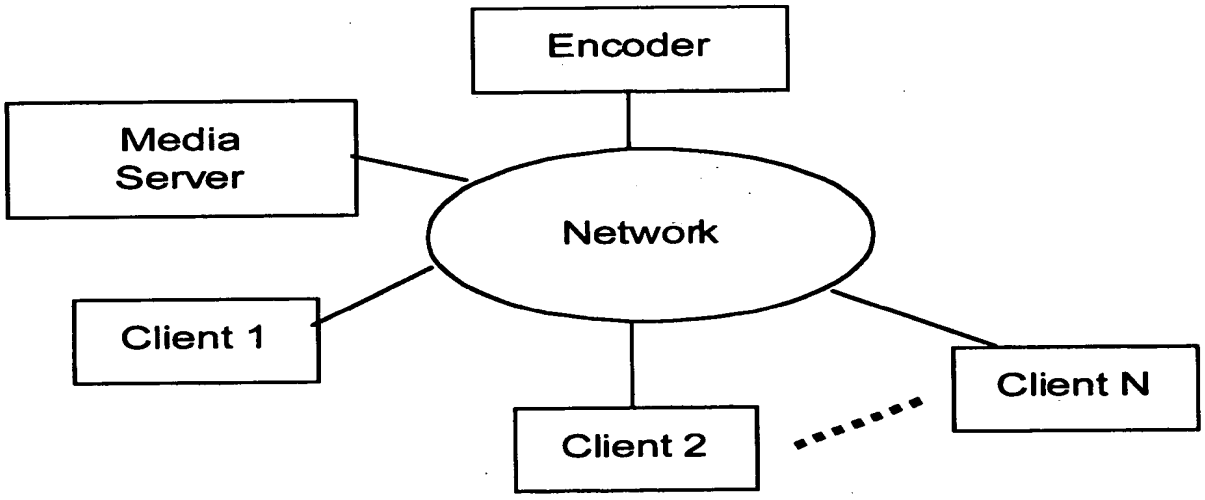
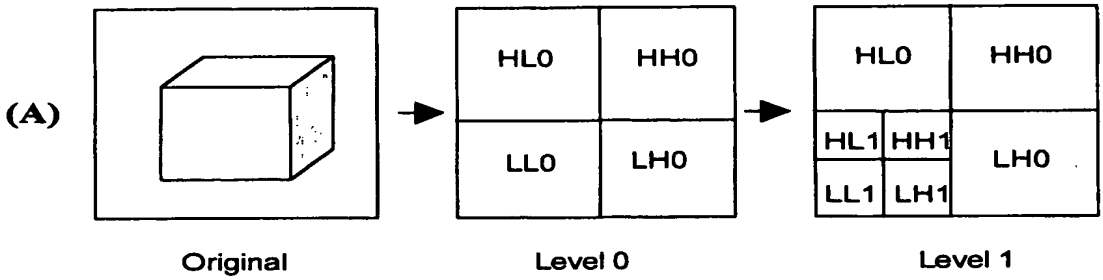
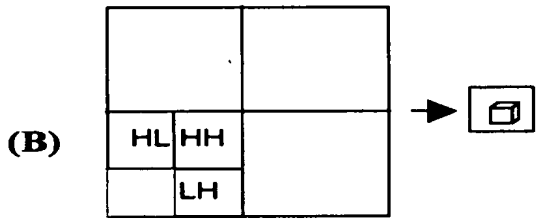
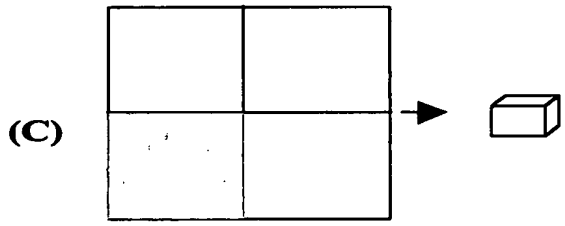


Figure 1

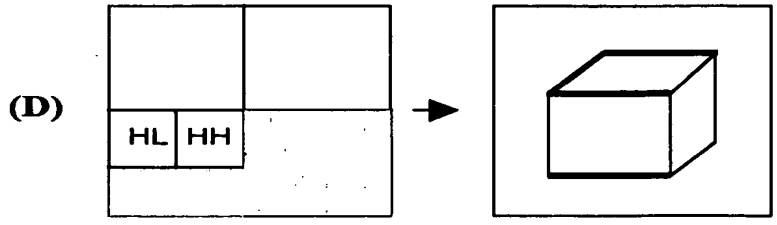




Reconstruction using LL
Subband of level 1
(lowest-resolution)



Reconstruction using LL
Subband of level 0
(medium resolution)



Reconstruction using LL & LH, subband of level 1
And LH subband of level 0
(Original resolution,
horizontal features at all scales emphasised)

Figure 2

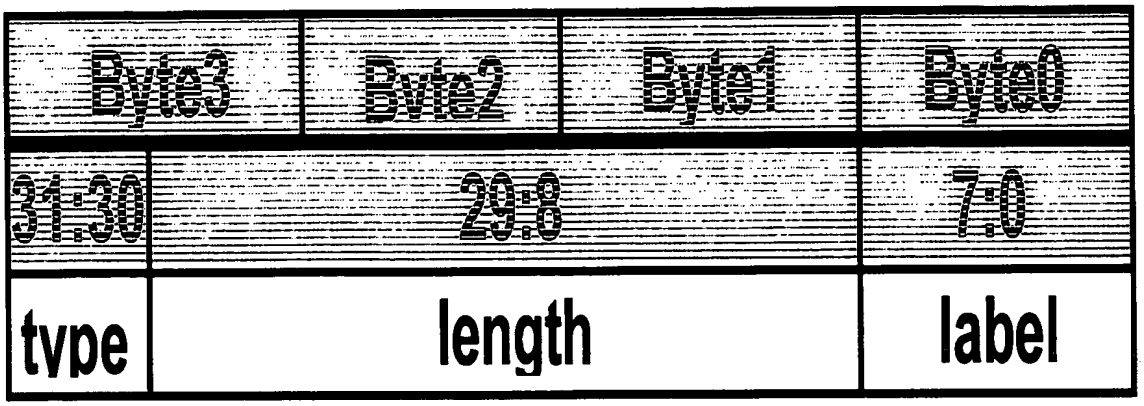


Figure 3

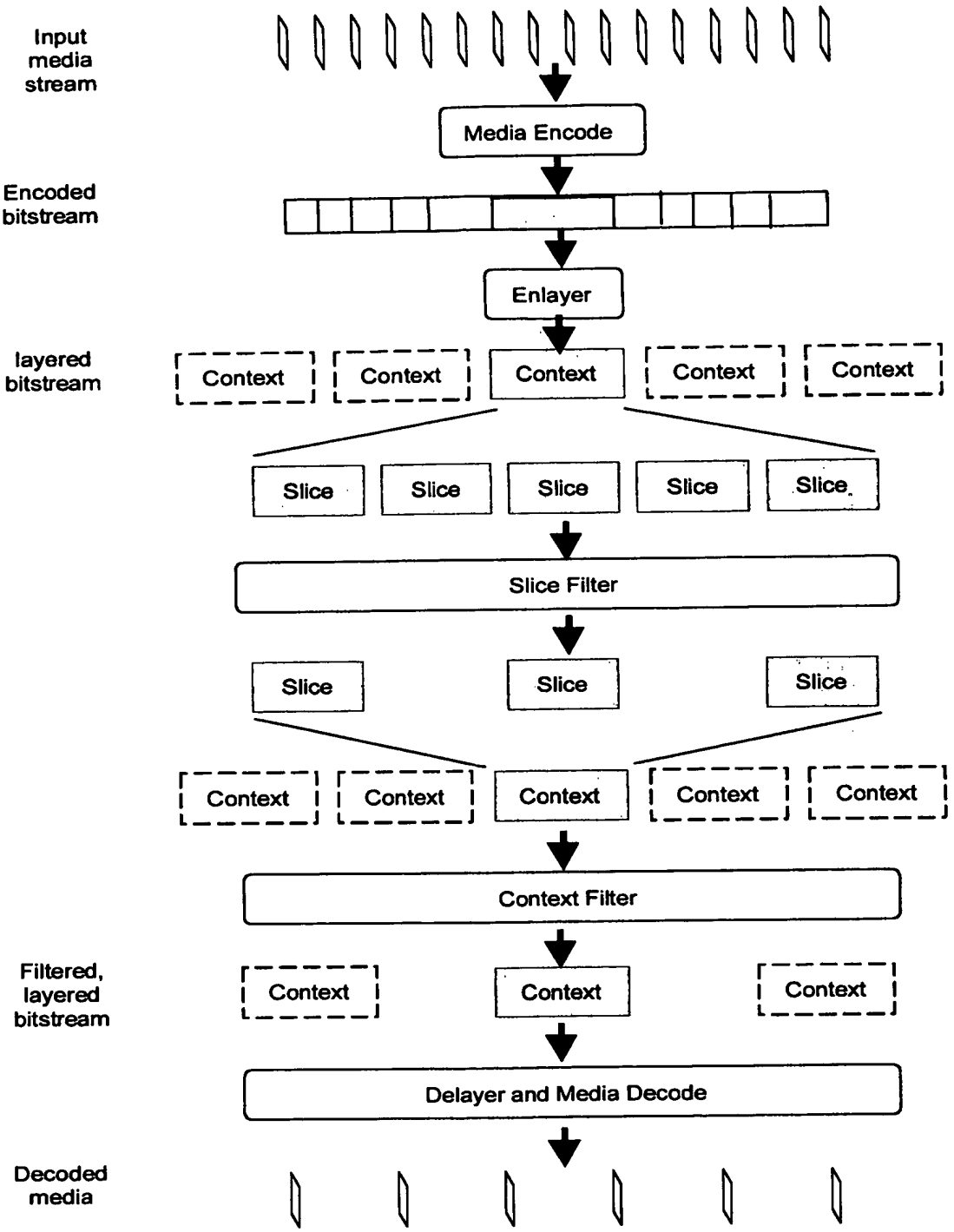

Input media stream
Media Encode
Encoded bitstream
Enlayer
layered bitstream
Context
Context
Context
Context
Context
Slice
Slice
Slice
Slice
Slice
Slice Filter
Slice
Slice
Slice
Context
Context
Context
Context
Context
Context Filter
Filtered, layered bitstream
Context
Context
Context
Delayer and Media Decode
Decoded media

Figure 4

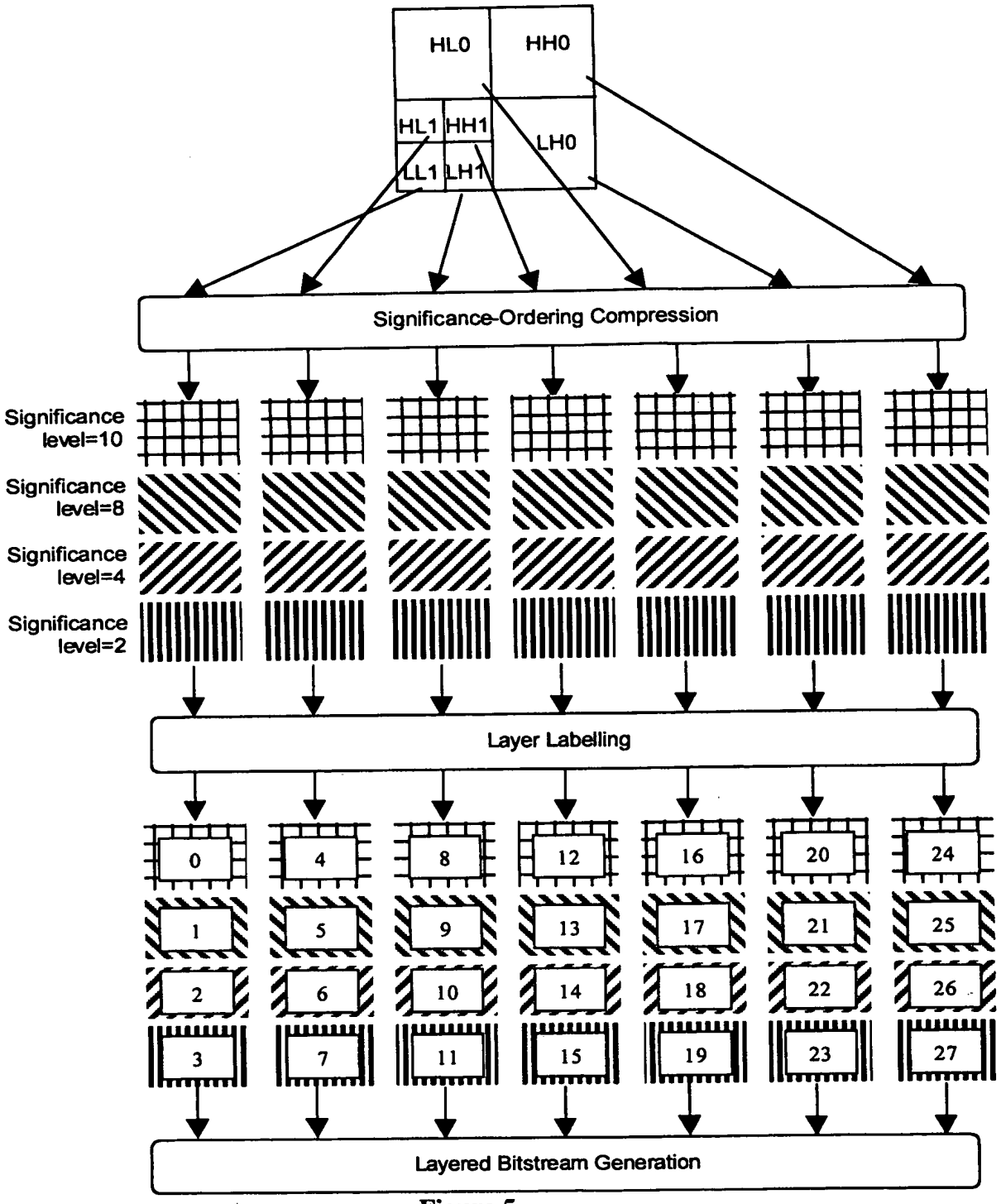

HL0
HH0
HL1
HH1
LH0
LL1
LH1
Significance-Ordering Compression
Significance level=10
Significance level=8
Significance level=4
Significance level=2
Layer Labelling
0
4
8
12
16
20
24
1
5
9
13
17
21
25
2
6
10
14
18
22
26
3
7
11
15
19
23
27
Layered Bitstream Generation

Figure 5

```
CodebookID: Wavelet_SIF_2D_YUV_0 ;
QualityTags: scale, fidelity, colour ;
QualityDivisions : scale(full, half, qtr), fidelity(lossless, high, medium, low), colour(luma, yuv) ;
OriginalSize: width=352, height=288 ;

Label: 0              // root subband, significan ce level 10
{
        Dependency : ;
        QualityParams : scale=qtr, fidelity=low, colour=luma ;
} ;

Label: 1              // root subband, significance level 8
{
        Dependency : 0 ;
        QualityParams : scale=qtr, fidelity=medium, colour=luma ;
} ;

Label: 2              // root subband, significance l evel 4
{
        Dependency : 1, 0 ;
        QualityParams : scale=qtr, fidelity=high, colour=luma ;
} ;

Label: 3              // root subband, significance level 2
{
        Dependency 2, 1, 0 ;
        QualityParams : scale=qtr, fidelity=lossless, colour=luma ;
} ;

Label: 4              // HL subband at depth 1, significance level 10
{
        Dependency : 3, 2, 1, 0 ;
        QualityParams : scale=half, fidelity=low, colour=luma ;
} ;

Label: 5              // HL subband at depth 1, significance level 10
{
        Dependency : 3, 2, 1, 0 ;
        QualityParams : scale=half, fidelity= medium, colour=luma ;
} ;

Label: 8              // LH subband at depth 1, significance level 10
{
        Dependency : 3, 2, 1, 0 ;
        QualityParams : scale=half, fidelity=low, colour=luma ;
} ;

Label: 9              // LH subband at depth 1, significance level 8
{
        Dependency : 3, 2, 1, 0 ;
        QualityParams : scale=half, fidelity=medium, colour=luma ;
} ;

Label: 12             // HH subband at depth 1, significance level 10
{
        Dependency : 8, 3, 2, 1, 0 ;
        QualityParams : scale=half, fidelity=low, colour=luma ;
} ;

Label: 13             // HH subband at depth 1, significance level 8
{
        Dependency : 12, 8, 3, 2, 1, 0 ;
        QualityParams : scale=half, fidelity=medium, colour=luma ;
} ;
```

Figure 6

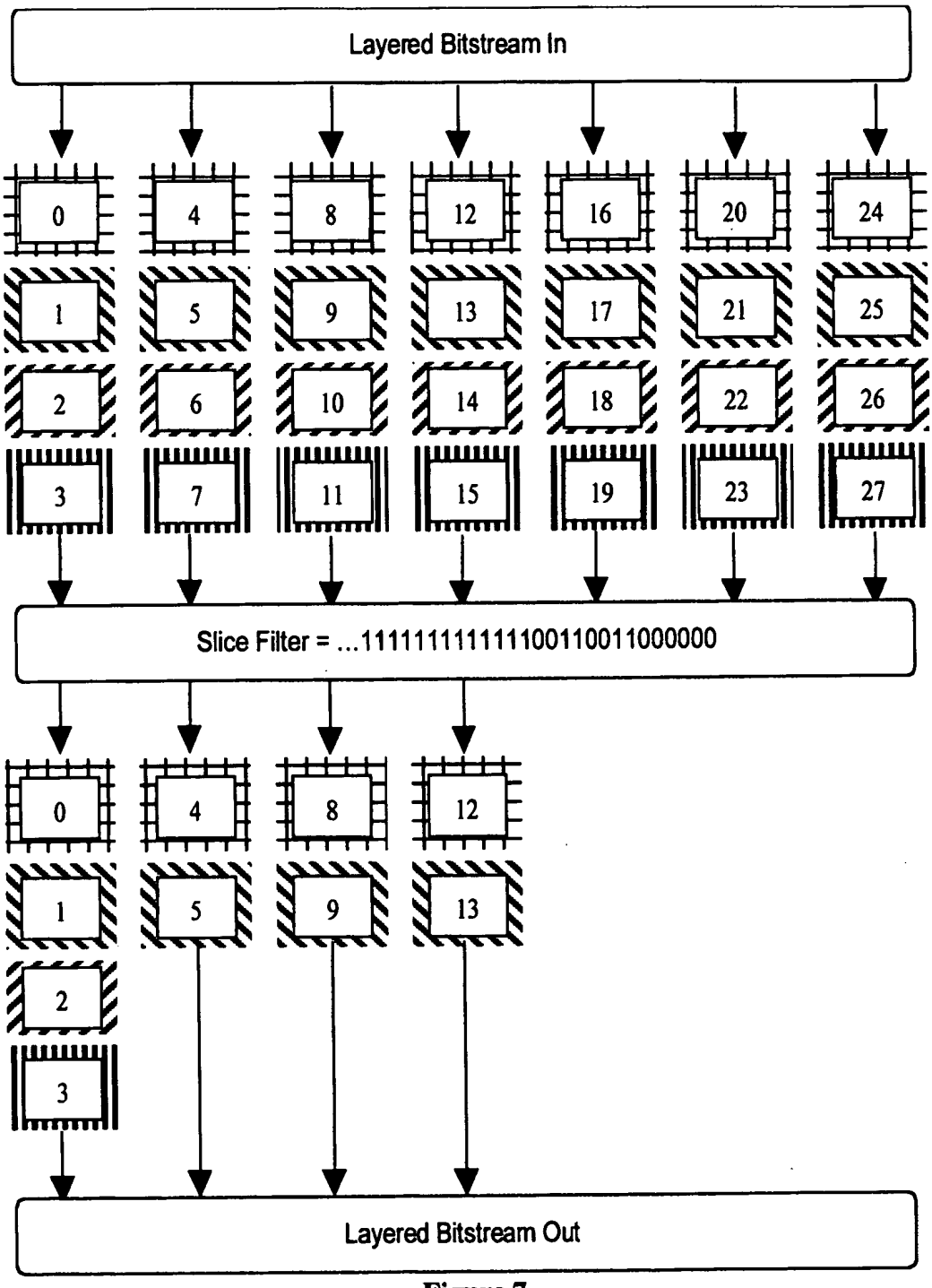

Layered Bitstream In
0
4
8
12
16
20
24
1
5
9
13
17
21
25
2
6
10
14
18
22
26
3
7
11
15
19
23
27
Slice Filter = ...11111111111100110011000000
0
4
8
12
1
5
9
13
2
3
Layered Bitstream Out

Figure 7

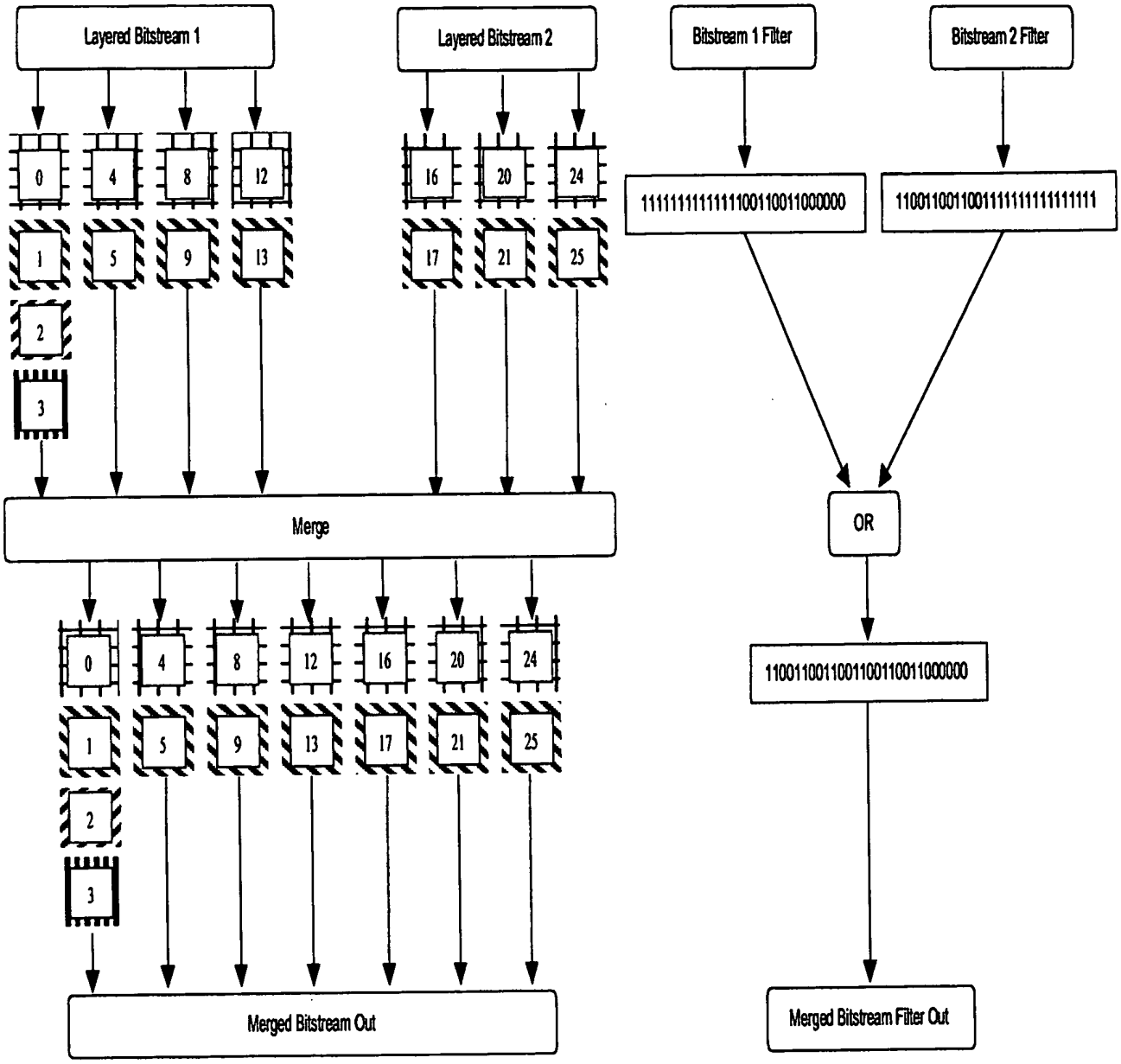

Layered Bitstream 1
Layered Bitstream 2
Bitstream 1 Filter
Bitstream 2 Filter
0
4
8
12
16
20
24
1
5
9
13
17
21
25
2
3
1111111111111100110011000000
11001100110011111111111111111
Merge
OR
0
4
8
12
16
20
24
1
5
9
13
17
21
25
2
3
11001100110011001100110000000
Merged Bitstream Out
Merged Bitstream Filter Out

Figure 8

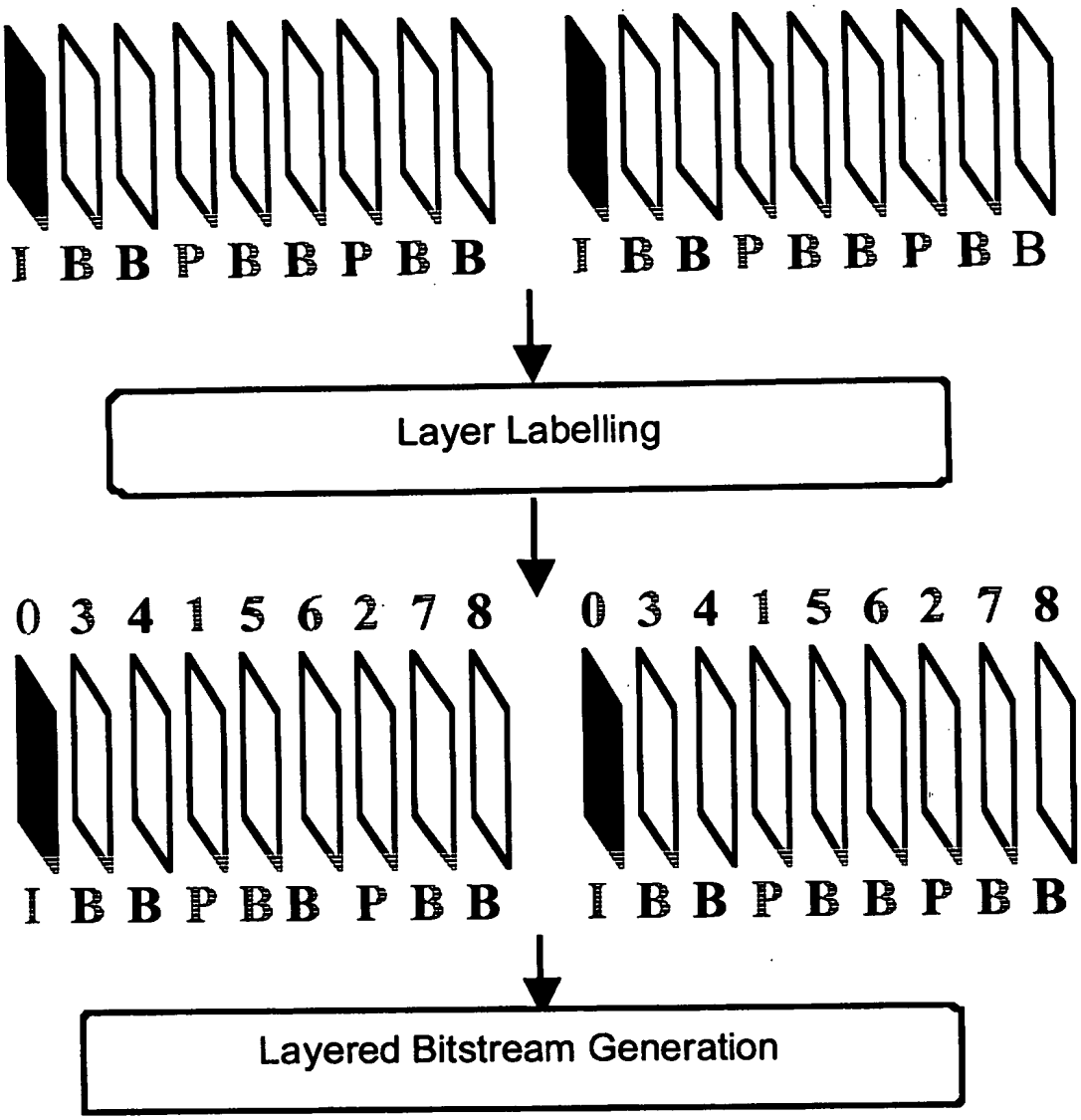

I B B P B B P B B
I B B P B B P B B
Layer Labelling
0 3 4 1 5 6 2 7 8
0 3 4 1 5 6 2 7 8
I B B P B B P B B
I B B P B B P B B
Layered Bitstream Generation

Figure 9

```
CodebookID: Mpeg1_GOP9 _0 ;
QualityTags: playrate ;
QualityDivisions : playrate (normal, fast, vfast) ;

Label: 0  // I-Frame
{
        Dependency : ;
        QualityParams : playrate=vfast ;
        TemporalPriority = 0 ;
} ;

Label: 1  // P-Frame
{
        Dependency : 0 ;
        QualityParams : playrate=fast ;
        TemporalPriority = 1 ;
} ;

Label: 3  // B-Frame
{
        Dependency : 1, 0 ;
        QualityParams : playrate=normal ;
        TemporalPriority = 2 ;
} ;
```

Figure 10

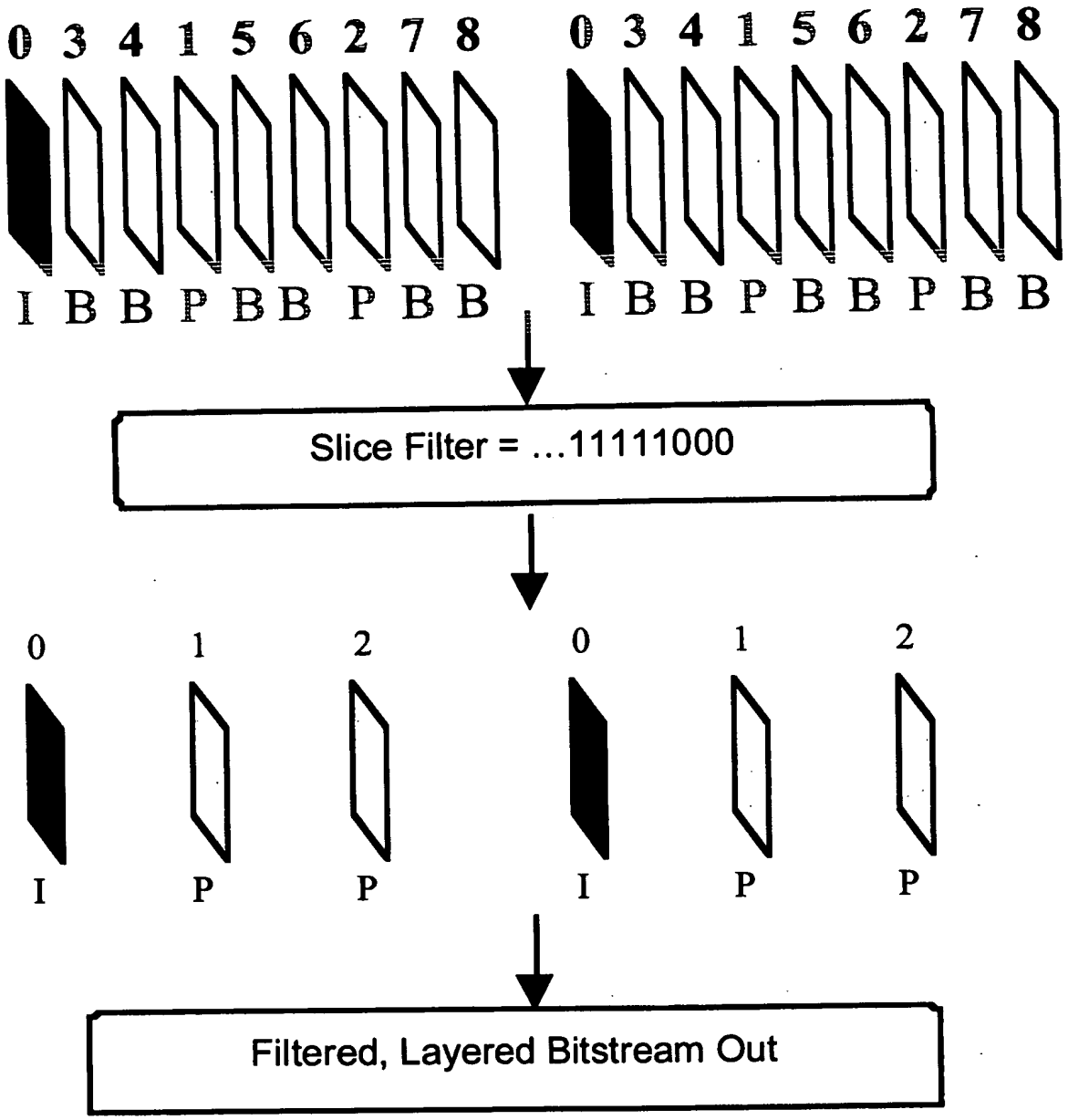

0 3 4 1 5 6 2 7 8
I B B P B B P B B
0 3 4 1 5 6 2 7 8
I B B P B B P B B
Slice Filter = ...11111000
0 1 2
I P P
0 1 2
I P P
Filtered, Layered Bitstream Out

Figure 11

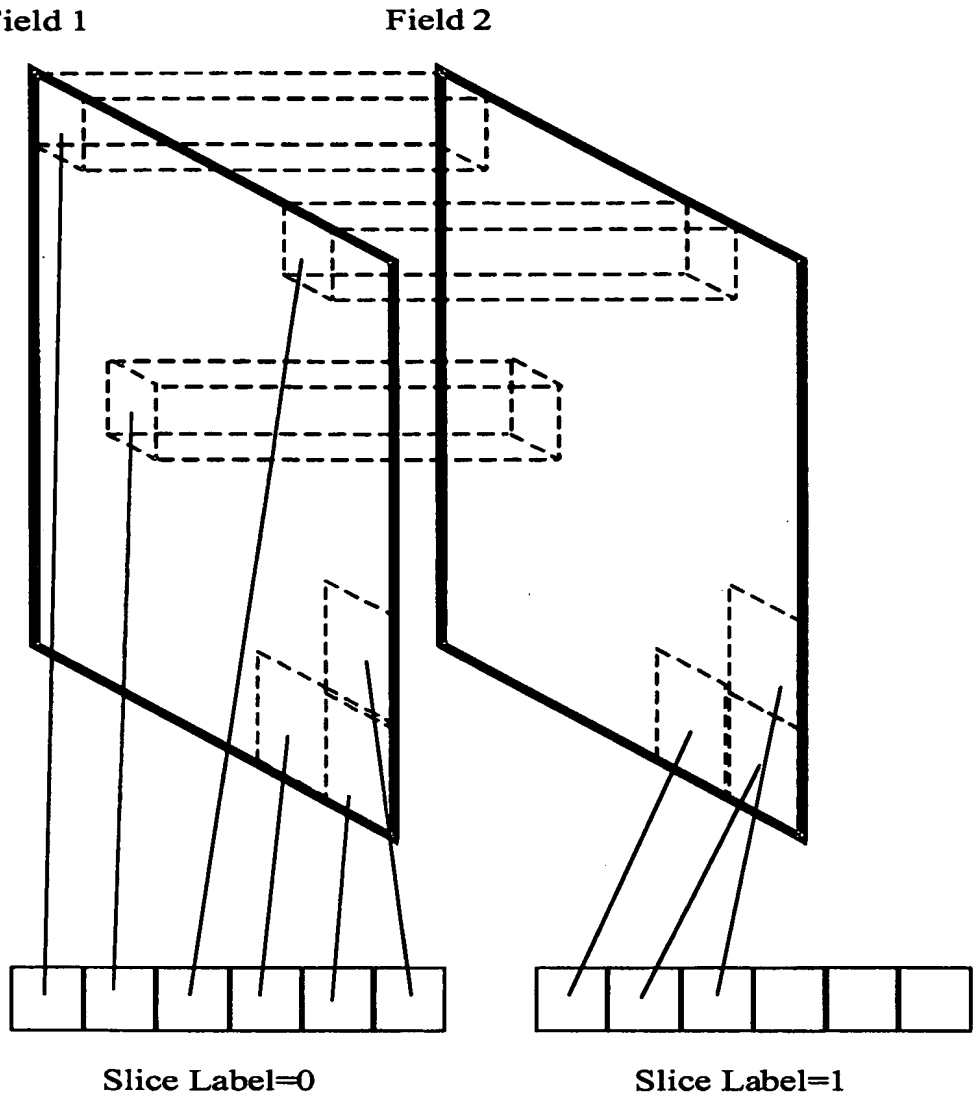


Figure 12

```
CodebookID: DV_0;
QualityTags: scale;
QualityDivisions: scale (full, half);
OriginalSize: width=704, height=576;

Label: 0  // Field 0 8-by-8 and field 0/1 2-by-4-by-8 DCT blocks
{
        Dependency: ;
        QualityParams: scale=half;
};

Label: 1  // Field 1 8-by-8 DCT blocks
{
        Dependency: 0;
        QualityParams: scale=full;
};
```

Figure 13

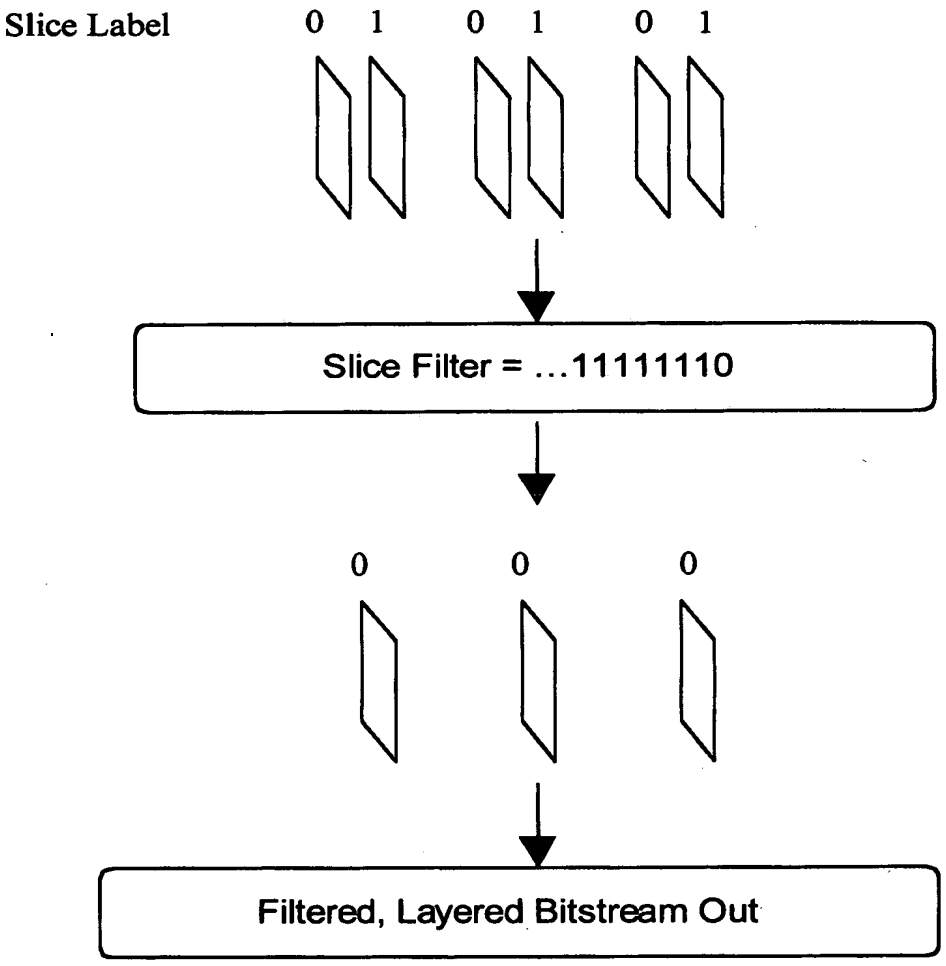

Slice Label
0 1 0 1 0 1
Slice Filter = ...11111110
0 0 0
Filtered, Layered Bitstream Out

Figure 14